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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

HOLD THE MEETING IN IOWA . . . AND THEY WILL COME

Although you won't see "Shoeless" Joe Jackson materialize from the corn, the conference in Ames, Iowa, October 20-23, 1996, on "Extension's Role in Biotechnology Education" is still sure to please. The focus is on educators and giving them the tools they need to understand and communicate information on the new products of agricultural biotechnology. There will be workshops, hands-on demonstrations, lesson plans, educational materials, industry reps to describe the new products, and much more information to take home. A call for proposals to present a paper or workshop will go out January 1 as well as registration forms. To receive both, please call Deborah Curry at 515-294-8417; Fax: 515-294-1047; E-mail: x1curry@exnet.iastate.edu

13 -- A LUCKY NUMBER FOR BIOTECH RESEARCHERS

Thirteen proposals for plant biotechnology research were funded by USDA's Food and Agricultural Sciences National Needs Graduate Fellowship Grants Program for FY 1995. The fellowship program is administered by USDA's Cooperative State Research, Education, and Extension Service for the purpose of encouraging students to pursue graduate degrees in those areas of agriculture where there is a critical need for more research. These areas include plant biotechnology, engineering, water science, animal biotechnology, human nutrition, food science, and marketing.

A total of 39 proposals were funded, including those for plant biotechnology research, at 24 institutions in 23 states. The grants totalled \$3,564,000. To learn more about the program, please contact Jay Jackman at USDA, 14th and Independence Ave., S.W., Room 3434-S, Washington, DC 20250-0904.

NEWS AROUND THE NATION (AND THE WORLD)

ANOTHER SERVING OF HAZARDOUS WASTE, ANYONE?

If you were a microorganism that loves to feed on toxic materials, your answer would be "Pile it on!" When done, you will have broken down the toxic matter into harmless compounds and not contributed to a toxic dump site. You will also have completed a process known as bioremediation, a branch of biotechnology in which microorganisms feed on waste.

Harnessing those "bugs" which digest waste and providing the ideal environment for them to work has been a challenge. But the use of a bioreactor -- a huge lined pit -- solves most of the problems. Now scientists are keen on using genetic engineering to expand on microbes' appetites to include petroleum spills, contaminated soil, and other toxic wastes.

If you or your students would like to know how that works, then send for the fact sheet called "Bioremediation" from Ag-West Biotech Inc. in Saskatchewan, Canada. The company's president, Murray McLaughlin, has prepared a number of easy-to-read summaries on tough, technical subjects. The entire series is called "The AgBiotech Infosource." For more details, please write to Ag-West Biotech Inc., 230-111 Research Drive, Saskatoon, Saskatchewan, Canada S7N 3R2. The phone number is 306-975-1939; Fax: 306-975-1966; E-mail: agwest@innovplace.saskatoon.sk.ca

NOTE TO READERS: See the October 15, 1995 issue of Genetic Engineering News (Vol. 15, No. 18), page 6, for a lengthy article about bioremediation efforts worldwide.

A BLUEPRINT FOR THE FUTURE OF BIOTECHNOLOGY

Under the auspices of the Executive Office of the President, a research strategy for biotechnology has been prepared encouraging more research in non-medical fields such as agriculture, the environment, aquaculture, and bioprocessing. The agriculture component of the blueprint stresses the need to continue research into gene mapping, metabolic pathways, the mysteries of growth and development, and the relationship between the environment and plants and animals. At the outset, the editors notes that the document does not represent "the final determination in an overall Administration budget decisionmaking process. The research programs in this report will have to compete for resources against many other high priority Federal programs."

The report is entitled "Biotechnology for the 21st Century: New Horizons." It was prepared by the Biotechnology Research Subcommittee of the Committee on Fundamental Science, which reports to the National Science and Technology Council. A limited

number will be available at no cost from USDA's Office of Agricultural Biotechnology by sending a request by fax to 202-720-5336. Copies are also for sale by the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328. The report can also be accessed on the Internet at <http://www.nalusda.gov/bic/bio21>

USING BIOTECHNOLOGY TO IMPROVE TREES

In only 1 year of operation, the newly formed Tree Genetic Engineering Research Cooperative (TGERC) has made some significant contributions. First, after receiving approval from USDA, TGERC planted the first set of flowering transgenic poplars to examine sterility and herbicide resistance. Scientists also advanced the knowledge base related to gene transfer in cottonwoods. All TGERC research is oriented toward three goals: efficiency of gene transfer and transgene expression; large-scale field testing, and environmental safety of engineered plantations.

The cooperative is based at Oregon State University (OSU). The research is supported by 11 forest industries, OSU, the Electric Power Research Institute, the Department of Energy, dues from regular members, and grants, including one from USDA's National Research Initiative. To receive a copy of TGERC's 1994-1995 Annual Report, please send a request by fax to Steven H. Strauss, Professor and TGERC Director, at 503-737-1393; E-mail: strauss@fsl.orst.edu

A DUTCH TREAT

The September 1995 issue of *Biotechnology and Development Monitor*, a Dutch publication, is devoted entirely to biotechnology in the United States. Articles cover regulation, government policies, development aid, public acceptance, and company strategies. Inquiries about subscribing to the journal should be addressed to the University of Amsterdam, Department of Political Science, Oudezijds Achterburgwal 237, 1012 DL Amsterdam, The Netherlands. The E-mail address is monitor@sara.nl

LECTURE SERIES FOR STUDENTS ON RNA

Scan a daily newspaper and you're bound to find at least one story that uses the term DNA (deoxyribonucleic acid). But how often do you read about the messenger protein called RNA (ribonucleic acid)? Now is a good time to learn the crucial role RNA plays in all living forms.

And what better person to conduct the lesson than the 1989 Nobel Laureate for Chemistry, Thomas R. Cech. Cech will present four lectures via satellite on "The Double

Life of RNA", December 18 and 19. The lectures will be transmitted free to students and teachers in the United States and Canada as a public service of the Howard Hughes Medical Institute. Educators who register will receive free background materials, which will be mailed well in advance of the lectures. The lectures will include live experiments. For more details, please write to the Howard Hughes Medical Institute, Office of Grants and Special Programs, Precollege and Public Science Education Program, Holiday Lectures on Science, 4000 Jones Bridge Rd., Chevy Chase, MD 20815-9864.

CALL FOR PRESENTATIONS FOR BIOSAFETY SYMPOSIUM IN JAPAN

Organizers of the "Fourth International Symposium on the Biosafety Results of Field Testing Genetically Modified Plants and Microorganisms," which will be held in Tsukuba, Japan, July 14-17, 1996, are inviting prospective participants to submit an abstract (no more than two pages) describing the rationale and principal results of their field testing. The organizers will review the abstracts and invite selected individuals to present their results in a plenary panel session. (See the September issue of *Biotechnology Notes* for panel topics.) Those not selected for a panel presentation are welcome to present their results in the poster session. The abstracts are due January 15, 1996. Abstracts may be faxed to Akihiro Hino at 81-3-3502-4028; phone: 81-3-3502-3919; E-mail: akhino@s.affrc.go.jp

APPLICATIONS DUE SOON FOR ETHICS PROGRAM

March 1, 1996 is the cutoff date for those life sciences faculty members who wish to apply for a course in environmental and agricultural ethics which will be taught May 5-10 at Michigan State University in East Lansing. The program is conducted by Iowa State University's Bioethics Institute.

The goal of the course is to prepare faculty to introduce discussions of ethical issues into existing science courses. Three philosophers and international experts in bioethics will cover issues such as intellectual property rights, honesty and integrity in scientific research, environmental ethics, justice between developed and developing economies, feminist moral theory, risk assessment, and the politics of uncertainty. For more details, please call Professor Fred Gifford at 517-355-4490; E-mail: gifford@pilot.msu.edu

BIOTECHNOLOGY LAB CLASSES STARTING

Exon-Intron, Inc., a Columbia, MD firm specializing in biotechnology education, is offering dozens of training sessions and 1-day mini courses in advanced laboratory techniques throughout 1996. Classes are held around the country. If you need to brush up on your

lab skills, then contact the company at 410-730-3984; Fax: 410-730-3983; 1-800-407-6546; Home page: <http://www.dnatech.com>

The Catholic University of America's Center for Advanced Training in Cell and Molecular Biology will also be conducting classes in advanced biotech techniques. All are held in Washington, DC and run from January-March, 1996. For more details, please call 202-319-6161; Fax: 202-319-4467; E-mail: millerm@cua.edu

LATEST FINDINGS ON MICROBIAL TECHNOLOGY

Microbial experts will present their findings at the ABIC '96 international conference in Saskatoon, Saskatchewan, Canada, June 11-14, 1996. The research will cover the use of bacteria used in the development of transgenic crops and in the control of weeds in cereal crops as well as the use of viruses to control insects in horticultural field crops.

Microbial technology is just one track at the ABIC (Agricultural Biotechnology International Conference) meeting which is dedicated to the agbiotechnology industry worldwide. Dozens of sessions will cover almost every base in agriculture, forestry, and aquaculture. For more details, please contact Dalton Tamney at 306-374-5814; E-mail: dalton.tamney@sasknet.sk.ca

IN CASE YOU WEREN'T THERE

■ **This year's National Future Farmer's of America (FFA) convention** in Kansas City featured the results of a special project on the skills needed to become an agricultural biotechnology technician. The skills encompass communications, safety, basic lab skills, basic microbiology, cell biology techniques, quality control, nucleic acid techniques, protein techniques, regulatory compliance, knowledge and experience in growth chamber techniques as well as the principles of conducting field trials. Many other related academic skills are needed as well as those related to good work habits. The standards are published in a brochure called "Agricultural Biotechnology Technician," and is available from the National FFA Foundation, 579 D'Onofrio Drive, Suite 10, Madison, WI 53719. The project was sponsored by the Department of Education and the Department of Labor.

■ **Georgetown University held its fourth Ceres Conference**, November 1-3, at the Aspen Institute in Wye, MD. The biannual conference brought together prominent figures from industry, academia, and government with an interest in food and nutrition issues. This year's focus has been on "Technological Innovation and the Global Food System." In his keynote address, Paul Romer of Stanford's Hoover Institute discussed the interplay

of economics and policy in research and development. He suggested seeking new paradigms for rewarding basic research and providing greater access to information which can be disseminated at virtually no cost. He was followed by a panel that discussed alternative approaches to funding and stimulating research and development.

The next panel was chaired by Caroline Jackson, Conservative spokesperson on consumer protection and environmental affairs in the European Parliament. Discussion shifted to impediments to trade of biotech foods and the feasibility of harmonizing international regulations. For more details, please write to Robin Woo, Georgetown Center for Food and Nutrition Policy, 3240 Prospect St., N.W., Washington, DC 20007.

NEW PUBLICATIONS

■ *Genetically Modified Organisms: A Guide to Biosafety*. Prepared by the Secretariat of the U.N. Industrial Development Organization in cooperation with the International Centre for Genetic Engineering and Biotechnology in Vienna, Austria. George T. Tzotzos, Editor. Published June 1995 by CAB International. For ordering information, please write to University of Arizona Press, 1230 N. Park Ave., Tucson, AZ 85719.

■ *1994 Scientific Annual Report of the National Research Center for Biotechnology*. Published by GBF, Braunschweig, Germany. 1995. Edited by J.-H. Walsdorff. For ordering information, please call 05-31-6181-0; Fax: 49-531-6181-515.

UPCOMING MEETINGS

Dec. 17-22: "Biotechnology of Foods and Flavors." A symposium at the PACIFICHEM '95 Congress. Honolulu, Hawaii. Registration information is in *Chemical Engineering News*, July 10, 1995.

1996

Jan. 14-18: The International Plant Genome IV Conference. San Diego, CA. For details, please call 212-643-1750; Fax: 212-643-1758; E-mail: Scherago@Biotechnet.Com

Jan. 15-18: BioEast '96. Washington, DC. Sponsored by *Genetic Engineering News* and the International Society for the Advancement of Biotechnology. For details, please send a fax to 301-652-4951.

1. About the Biotechnology Information Center(BIC).

2. BIC Miscellaneous Publications/

1. Ag/Biotech Electronic Information Resources.
2. Agricultural Biotechnology Video List.
3. Agricultural Biotechnology: Current Citations.
4. Biotechnology Information Center: Complete Publ. List.
5. Databases Related to Agricultural Biotechnology.
6. Directories Related to Agricultural Biotechnology.
7. General Informational Pamphlets/Organizations - AgBiotech.
8. Germplasm Resources Information Network.
9. Guide to Printed Information Sources in Biotechnology.
10. Meetings/Symposia/Workshops.
11. Newsletters Related to Agricultural Biotechnology.
12. USDA Agricultural Biotechnology Related Reports.

3. Bibliographies and Resource Guides/

1. Biosafety & Risk Assessment Bibliography (from BINAS)
2. About_These_Files.
3. BGH and the Dairy Industry--Historic References (SRB8603).
4. Bibliography_Backfile:earlier_versions/
5. Biotech_of_Algae:A_Bibliography_Dec92.
6. Biotechnology and Sustainable Agriculture: A Bibliography (SRB 94-13)
7. Biotechnology of Algae: A Bibliography, Dec., 1992.
8. Biotechnology:International_Affairs.
9. PineBib:_A_Conifer_Bibliography.
10. QB9308 Gene Expression in Horticultural Crops 1/91-10/92.
11. QB9310 Gene Exp. in Algae and Fungi Inc. Yeast 1/91-12/92.
12. QB9311 Biotechnology and Bioethics, 1/91-12/92.
13. QB9313 Biotech: Plant Protection from Non-viral Agents 1/91-12/92.
14. QB9315 Biotechnology: Public Perception 1/85-12/92.
15. QB9318 Biotechnology: Forestry and Forest Products 1/90-1/93.
16. QB9320 Biotechnology: Patenting Issues, 1/85-1/93.
17. QB9324 Biotech: Genetic Eng. for Crop Plant Improv. 1/92-1/93.
18. QB9334 Biotech: Food Science and Technology 1/91-3/93.
19. QB9343 Biotechnology: Plant Nutrition 1/88-4/94
20. QB9410 BST-Bovine Growth Hormone 1/91-1/94.
21. QB9420 Biotech: Commercialization and Econ. Aspects 1/91-1/94.
22. QB9433 Biotech: Legislation and Regulation 1/89-1/94.
23. QB9434 Transgenic Animals 1/91-2/94.
24. QB9441 Tissue Culture: Plants 1/92-3/94.
25. QB9448 Gene Expression in Oilseed, Fiber, and Forage Crops 1..2-5/94.
26. QB9449 Biotechnology: Gene Gun/Bioliatic Technology 1/86-7/94.
27. QB9450 Biotechnology: Bioremediation 1/92-7/94.
28. QB9457 Biotechnology: Gene Expression in Cereal Crops 6/92-5/94
29. QB9459 Biotechnology: Ti Plasmids and Other Plant Vectors 1/93-6/94
30. QB9460 Herbicide Tolerance/Resistance in Plants 4/91-3/94
31. Transgenic_Fish_Research:A_Bibliography_July93.
32. transgenic_tomato-dec.91 bib.
33. transgenic_tomato-dec.93 bib.

5. Biotechnology Education Resources/

1. Biotechnology Education:A List of National and Local Contacts.
2. Glossary of Ag Biotechnology Terms (from NBIAP).
3. Primer on Molecular Genetics (Human Genome Project).
4. Educational Resources in Genetics: Organizations & Databases (JHU).
5. UWBC BioIssues-Vol 5, No.1 (Focus on Biotechnology Education/
6. Genetic Engineering News (GEN) Education Forum (T. Zinnen)

7. BCEPP:Biotechnology Education & Public Policy Network/ListServer
8. GENTALK: The Genetic Engineering Talk Group (instructions).
9. PLANT-EDUCATION Biosci Newsgroup - Overview
10. Iowa_Biotech_Educator
11. Iowa State's Biotechnology Information Series (full-text)
12. Biotechnology Classroom Protocols & Labs/
13. Genentech's Access Excellence Education Program
14. Local, State & Federal Biotech Education Programs/Initiatives
15. Other Biotechnology Education-Related Gophers/

6. Biotechnology Information Center: Complete Publication List

7. Biotechnology Patents - Full Text/

8. Newsletters and Periodicals/

1. BT_Catalyst/
2. Bio/Technology (via enews)/
3. BioIssues-Archives (via Univ. of Wisc. Biotech Center)/
4. Biological Journals - current titles/
5. Biotech_Notes/
6. Carolina_Genes/
7. FASEB Newsletter/
8. Genetic Engineering News (via enews)/
9. Iowa_Biotech_Educator/
10. NBIAP News Reports (via NBIAP gopher)/
11. Probe Newsletter - via National Agricultural Library (USDA)/
12. Rice_Biotechnology/
13. Technet/

9. Other Ag. Biotechnology-Related Gophers/

1. (APHISGopher) Biotechnology, Biologics and Environmental Protection/
2. Agricultural Biotechnology Centre (Godollo,Hungary)/
3. Agricultural Genome Databases/
4. Bioline Publications (online publications and newsletters)/
5. Biological Journals - current titles/
6. Bionet Newsgroups/
7. Biotechnet (On-line Computer Network for Biotechnology) <TEL>
8. Biotechnology Information Network & Advisory Service (BINAS)/
9. CRIS (Current Research Information Service)/
10. Center for Biotechnology Policy and Ethics (Texas A&M Univ.)/
11. EMBnet - Biotechnology Centre of Oslo (Norway)/
12. Global Biological Information Servers/
13. ICGEBnet - Intl. Center for Genetic Eng. & Biotech (Trieste,Italy.../
14. NBIAP (Nat'l Biol. Impact Assessment Program) Gopher/
15. Univ. of Wisconsin, Biotechnology Center (UWBC)/
16. sci.bio.technology (Usenet Newsgroup)/

10. Other Federal Biotechnology Documents/

1. Ag/Biotechnology News Releases (USDA, EPA, FDA, etc.)/
2. Biotech for 21st Century:Realizing the Promise-FCCSET Rept.FY94 Budget
3. Biotechnology and the Biodiversity Treaty (Selected Docs)
4. Biotechnology at NIST (Nat'l Insitit. Standards & Technology)
5. Biotechnology for the 21st Century - FCCSET Report FY '93 Budget
6. EPA Regulatory Documents (from EPA Gopher)
7. EPA's Biotech Oversight Program Under the Tox. Subs. Control Act.
8. Methods of Communicating Biotech. w/ the Public (US-EC Task Force)

11. Other Non-Federal Biotechnology Doc's (report, studies)/

12. Search on full-text of our files <?>/

13. Software/